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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.								
10/717,533	11/20/2003	Sang-Bin Lee	120576-5	7985								
7590	01/07/2005											
<table border="1"><tr><td colspan="2">EXAMINER</td></tr><tr><td colspan="2">HOLLINGTON, JERMELE M</td></tr><tr><td>ART UNIT</td><td>PAPER NUMBER</td></tr><tr><td></td><td>2829</td></tr></table>					EXAMINER		HOLLINGTON, JERMELE M		ART UNIT	PAPER NUMBER		2829
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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/717,533	LEE ET AL.
Examiner	Art Unit	
Jermelle M. Hollington	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 27 October 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 15-18 is/are allowed.

6)  Claim(s) 1-14 and 19-21 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_ .

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_ .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Bourgeois et al (5990688).

Regarding claim 1, Bourgeois et al disclose [see Fig. 1] a probe (probe 8) [see Note below] comprising: a probe core (c-shape magnetic circuit 10) having first and second sensing end portions (end faces 17 and 19); and a sense coil (measurement winding 22) wound about the probe core (10); wherein said probe (8) is adapted to detect abnormalities [known in the art as defects see col. 1, lines 10-12] in the electrical device (stator 2) in a spaced [shown by gaps 36], contact-free relationship between and at least partially above opposed adjacent surfaces (faces 86 of each teeth 4) of portions of the electrical device (2), forming first and second air gaps (residual gaps 36) between the first and second sensing end portions (17 and 19) of the core (10) and the respective opposed adjacent surfaces (86).

[Note: the recitation “for detecting abnormalities in an electrical device having an effective wedge depression of no more than 200 mils” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Regarding claim 2, Bourgeois et al disclose said probe (probe 8) is adapted to detect abnormalities [known in the art as defects] in the electrical device (stator 2) in a spaced [shown by gaps 36], contact-free relationship between and completely above opposed adjacent surfaces (faces 86 of each teeth 4) of portions of the electrical device (2).

Regarding claim 3, Bourgeois et al disclose a total of the first and second air gaps (36) is constant.

Regarding claim 4, Bourgeois et al disclose [[see Fig. 5] the core (10) comprises a material (laminations 76) having high initial permeability and high resistivity characteristics [see col. 7, lines 23-24].

Regarding claim 5, Bourgeois et al disclose the core (10) comprises a plurality of laminated layers (76) of a material and wherein the laminated layers (76) have high initial permeability and high resistivity characteristics [see col. 7, lines 23-24].

Regarding claim 6, Bourgeois et al disclose the core (10) comprises iron [see col. 7, lines 13-21].

Regarding claim 7, Bourgeois et al disclose the probe core (10) includes a skirt (shown as prong portions 16 and 18).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 8-14 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourgeois et al (5990688) in view of Dailey et al (5557216).

Regarding claim 8, Bourgeois et al disclose [see Fig. 1] a sensing apparatus (electronics 34) comprising: a probe (probe 8) having a core (c-shape magnetic circuit 10) with sensing end portions (end faces 17 and 19) and a coil (measurement winding 22) wound about the core (10); means (electronics 34) for supporting said probe (8) being adapted to maintain the sensing end portions (17 and 19) of the core (10) in a contact-free, spaced relationship [shown by gaps 36] between opposed surfaces (face 86) of members (teeth 4) which form part of the electrical device (stator 2) and through which leakage flux (flux  $\Phi$ ) passes. However, they do not disclose moving the probe to a new position as claimed. Dailey et al [see Fig. 1] disclose the electrical device (12) as a stator core of an electrical generator [see col. 3, lines 16-17] that is attached by a probe support carriage (carriage 22) for moving the probe (test instrument 10) to a new location. Further, Dailey et al teach that the addition of the carriage is advantageous because it is used to inspect the electrical generator that can accurately traverse a stator slot without the use of a mechanical device. It would have been obvious to a person having ordinary skill in the art at the

time the invention was made to modify the apparatus of Bourgeois et al by adding a carriage as taught by Dailey et al in order to inspect the electrical generator without the use of a mechanical device.

[Note: the recitation "for detecting abnormalities in an electrical device having an effective wedge depression of no more than 200 mils" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Regarding claim 9, Bourgeois et al disclose said probe (probe 8) is adapted to detect abnormalities [known in the art as defects] in the electrical device (stator 2) in a spaced [shown by gaps 36], contact-free relationship between opposed adjacent surfaces (faces 86 of each teeth 4) of portions of the electrical device (2).

Regarding claim 10, Bourgeois et al disclose means (excitation source 12) for inducing energization of the device (2) to a predetermined level, which is lower than a normal operating level.

Regarding claim 11, Bourgeois et al disclose means (micro controller 66) responsive to the probe (8) for detecting a leakage flux (flux  $\Phi$ ), which occurs between the opposed surfaces

Regarding claim 12, Bourgeois et al disclose means (micro controller 66) for monitoring the fluctuation in probe output and determining a presence and location of a fault in response to the detection of an abnormal leakage flux fluctuation.

Regarding claim 13, Dailey et al disclose the probe (10) comprises a probe extension piece (control cable 32).

Regarding claim 14, Dailey et al disclose means (carriage 22) for moving the probe (test instrument 10) comprises a carriage (22) on which the probe (10) is suspended, the carriage (22) being adapted to move the probe (10) to a new position by moving along a surface (stator wedges 20) forming part of the device (stator 12).

Regarding claim 19, Bourgeois et al disclose [see Fig. 1] a system comprising: a probe (probe 8) including a core (c-shape magnetic circuit 10) of a material (laminations 76 of Fig. 5) having high initial permeability and high resistivity characteristics [see col. 7, lines 23-24], and a coil (prong portions 16 and 18) wound about the core (10); an excitation winding (excitation winding 20) removable disposed with the electrical device (2) and operatively connected with a source of excitation voltage (excitation source 12) for inducing a flux (flux  $\Phi$ ) in an electrical circuit in the electrical device (2); and a data acquisition system (micro controller 66 show in Fig. 4) operatively connected with the excitation winding (20) and the sensor coil (16 and 18) for monitoring the output of the sensor and detecting faults in the electrical device (2) which cause change in the leakage flux (flux  $\Phi$ ). However, they do not disclose probe carriage as claimed. Dailey et al [see Fig. 1] disclose the electrical device (12) as a stator core of an electrical generator [see col. 3, lines 16-17] that is attached by a probe support carriage (carriage 22) for moving the probe (test instrument 10) to a new location. Further, Dailey et al teach that the addition of the carriage is advantageous because it is used to inspect the electrical generator that can accurately traverse a stator slot without the use of a mechanical device. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Bourgeois et al by adding a carriage as taught by Dailey et al in order to inspect the electrical generator without the use of a mechanical device.

[Note: the recitation "for detecting abnormalities in an electrical device having an effective wedge depression of no more than 200 mils" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Regarding claim 20, Dailey et al disclose the probe carriage (22) further comprises a plurality of wheels (wheels 52, 58, 60, 62, 64 and 68) for riding on surfaces (stator wedge 20) of the electrical device (stator 12) normal to the opposed adjacent surfaces.

Regarding claim 21, Dailey et al disclose the probe carriage (22) further comprises a pair of width adjustors (slots 34, 36, 38 and 40) for adjusting the width of opposed ones of the plurality of wheels (wheels 52, 58, 60, 62, 64 and 68).

### *Conclusion*

6. Applicant's arguments filed Oct. 27, 2004 have been fully considered but they are not persuasive.

Regarding claim 1, the applicants argue: "*Claims 1-7 stand rejected under 35 U.S.C. 5 102 as being anticipated by Bourgeois. Applicants' respectfully traverse this rejection. Bourgeois relates to an apparatus for evaluating a condition of a magnetic circuit of an electric machine. The Bourgeois apparatus has a probe 8 that is positioned in a contact-free relationship with a surface 86 of the electrical device 2. However, the contact-free relationship is not "between and at least partially above opposed adjacent surfaces" as recited in claim 1. Instead, the probe 8 ends 17, 19 are separated from a single surface 86; hence, the contact-free relationship cannot be between and at least partially above opposed adjacent surface". Accordingly, Applicants respectfully submit that the independent claim 1 and claims 2-7 are patentably distinguishable over Bourgeois for at least the reason cited above.*"

In response to the above arguments, claim 1 states: "...wherein said probe is adapted to detect abnormalities in the electrical device in a spaced, contact-free relationship between and at least partially above opposed adjacent surfaces of portions of the electrical device..." MPEP 2114 states: "A recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish the claimed apparatus from the prior art – if the prior art has the capability to so perform (*Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)). Further, MPEP states that it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only require the ability to so perform. Therefore, the examiner believes that Bourgeois reference still reads on the claimed invention.

Regarding claim 8, the applicants argue: "*Claims 8-14 and claims 19-25 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over Bourgeois in view of Dailey. Claims 22-25 have been canceled, thus rendering this rejection moot as to those claims. Applicants respectfully traverse this rejection as it applies to the currently pending claims 8-14 and 19-21. Claim 8 recites a sensing apparatus for detecting abnormalities in an electrical device having an effective wedge depression of no more than 200 mils. The sensing apparatus of claim 8 includes "a probe" that is "in a contact-free, spaced relationship between and at least partially above opposed surfaces of the electrical device".*"

In response to the above arguments, claim 8 states: "...means for supporting said probe being adapted to maintain the sensing end portions of the core in a spaced, contact-free relationship between and at least partially above opposed adjacent surfaces of members..." MPEP 2114 states: "A recitation directed to the manner in which a claimed apparatus is intended to be used does not distinguish the claimed apparatus from the prior art – if the prior art has the capability to so perform (*Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)). Further, MPEP states that it has been held that the recitation that an element is "adapted to"

perform a function is not a positive limitation but only require the ability to so perform. Therefore, the examiner believes that Bourgeois reference still reads on the claimed invention.

7. Claims 15-18 are allowed over the prior art.
8. The following is a statement of reasons for the indication of allowable subject matter: regarding claim 15, the primary reason for the allowance of the claims is due to the specific limitation of a probe carriage having at least one probe location adjustment screw for adjusting the location of a probe to an electrical device. Since claims 16-18 depend from claim 15, they are also allowed.
9. Base on the above response by the examiner, the following is being applied.
10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (517) 272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jermele M. Hollington  
Patent Examiner  
Art Unit 2829

J.M.H.  
JMH  
December 28, 2004

DAVID ZARNEKE  
PRIMARY EXAMINER

1/4/05